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REMARKS/ARGUMENTS

35 U.S.C. § 102(b) Rejections

The Examiner has maintained his rejection of claims 10, 11, 13 and 16 as being anticipated by International Publication No. WO95/13668 to Mark Pennock.

It is respectfully submitted that the Examiner has not given proper weight to the limitation "transit" as it applies to the auxiliary transit antenna port. In Applicant's disclosure and claims, "transit" refers to communications that are between pairs of wireless network nodes in a wireless network. In addition to transit functionality, there is also access functionality, for example as recited in claim 18. Access functionality is for allowing mobile stations to communicate with a wireless network node. For example, in a wireless mesh access network, such as shown in Figure 1, multiple wireless network nodes 20,22,24,26,28 are interconnected via transit links 31,33,35. In addition, a mobile device 9 is shown in communication with network nodes 22,26 via access links 37,39.

It is understood that the Examiner is well founded in trying to give particular limitations as broad an interpretation as possible. However, the Doctrine of Claim Differentiation does require that different terms be given different meanings. The fact that both the terms "transit" and "access" are used in the description and claims requires that these terms be given different definitions. Furthermore, the definitions should be given in manner that is consistent with the description.

Turning now to the Pennock reference, it is readily apparent that the switching system discussed is forming part of a "portable radio telephone" (see the Abstract for example). This is analogous to a mobile device 9 of Figure 1 for example. The only type of link established from the mobile terminal of Pennock is an access link. There is no concept of additional transit links between the radio telephone and other devices. Furthermore, the device taught in Pennock only ever establishes a single link at a time. While there may be two antennas that are physically present, the antenna detector circuit 113 detects whether or not the second antenna is attached, and if so the switch 115 switches the active transmission path between the internal and the external antennas transmission path. Thus, only one of the two antennas is ever active, and a single link is only ever established, this being an access link.

Turning now to Applicant's claim 10, the language "include or not include the auxiliary transit port as an option for communications" was intended to convey the fact that once it was included as an option, the auxiliary transit antenna and the other transit antennas are all available for communications. The claim has been amended to clarify this by referring to the fact that when the auxiliary transit antenna is detected, an additional transit link can be established using the auxiliary transit antenna port and the auxiliary transit antenna simultaneously with the use of one or more transit links provided by the at least one transit antenna. Thus, when the auxiliary transit antenna is present, the wireless network node is capable of establishing at least two transit links, one of these making use of the detected auxiliary transit antenna.

Having amended the claim in this manner, there are a number of clear differentiating features compared to Pennock:

a) the inclusion of transit functionality in any shape or form – Pennock only deals with access functionality;

b) the facility to establish multiple links simultaneously via separate antennas – Pennock only teaches the switching between two different antennas so as to establish a single link.

As a side note, it is noted that the motivation for providing a different antenna in Pennock is to improve the RF signal path. In particular, the internal antenna that is available on some mobile terminals may provide poor reception; the Pennock solution provides the option of installing an external antenna to be used in place of the internal antenna to improve RF performance. See for example page 1, lines 8 through 22 of Pennock. In contrast, in Applicant's invention, an objective is to increase overall system throughput by providing an extra antenna with a dedicated transit link being established using that antenna.

It is respectfully submitted that claim 10 prior to these amendments was not anticipated by Pennock et al., but with the current amendments to claim 10 it is very clear that claim 10 is not anticipated by the cited reference, and as such the Examiner is respectfully requested to withdraw 35 U.S.C. 102 rejection of this claim.

Claims 11, 13 and 16 depend upon claim 10 and should be allowable for the same reasons.

35 U.S.C. § 103(a) Rejections

All of the remaining claims have been rejected under 35 U.S.C. 103(a) as being unpatentable over Pennock et al. either by itself (claim 14) or in view of various other references. To begin, of these claims, claims 12, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25 all depend upon one of the above-discussed claims, claims 10, 11, 13 or 16. In view of Applicant's submission regarding the 35 U.S.C. 102 rejection of those claims, these dependent claims should also be patentable. Provided below are a few further comments on some of these dependent claims. Failure to refer to a particular claim in the comments below is not a concession that the additional subject matter of those claims is taught in the additional reference being combined with Pennock.

With particular reference to the objections set out in paragraph 8 of the detailed action (see page 11) which concern claims 17 and 18, the Examiner indicates that "Pennock et al. fails to specifically disclose further comprising at least one access antenna to permit data transmission both to and from wireless mobile terminals located proximate to wireless network nodes". Applicant respectfully submits that what Pennock does disclose is only the inclusion of such an access antenna. As discussed above the "wireless network node" of Pennock is a portable telephone, and it only has access capability and as such has an access antenna. What is missing from Pennock is any transit link functionality as discussed in detail above. The Examiner also argues that Difonzo et al. (WO 03/017591) teaches the inclusion of a transit link radio and coupled to at least one transit antenna and the auxiliary transit antenna. However with respect, reviewing Difonzo, there is no auxiliary transit link antenna. Difonzo teaches the inclusion of at least one dynamically directionally controllable communications link, but there is no discussion of this being provided through an antenna that is an auxiliary antenna. Rather, this is simply another one of the antennas that is always present on the device.

Regarding claims 20, 21, 24, 26, the Examiner points to Difonzo as teaching the inclusion of an auxiliary transit antenna having either higher gain or higher data rate, etc. However, as discussed above there is no concept of an "auxiliary transit antenna" in Pennock. Rather, there are simply a set of antennas that all operate in the same manner. There is no discussion of the fact that some of the antennas are regular transit antennas, and then the auxiliary antenna that is removable might have either greater gain or higher data rate, etc. than the other antennas.

Regarding claims 22 and 23, the references to a "directional-mount" that the Examiner has found in Pennock in fact refer to steerable beams, these being steered using a beam forming array as opposed to different mounting of the antennas. It is respectfully submitted that it is clearly not the same to employ a directional-mount as opposed to steerable radiation beams. See page 6, line 21 of Pennock.

The Examiner has rejected claims 26 to 31 under 35 U.S.C. 103(a) as being unpatentable over Pennock et al. in view of newly cited U.S. Patent No. 5,341,375 to Buchholz et al.

To begin, Pennock does not disclose a method of operating a wireless network node having an auxiliary transit antenna port, or determining whether or not there is an auxiliary antenna coupled to the transit antenna port as suggested by the Examiner on page 15. The reasoning behind this has been detailed above with respect to the discussion of claim 10. The Examiner concedes that Pennock does not disclose adding the auxiliary transit antenna to a list of active antennas adapted for at least one of transmitting and receiving wireless signals so that the auxiliary transit antenna can be included or ignored as appropriate for at least one of transmitting and receiving wireless signals through the auxiliary transit antenna coupled to the auxiliary transit antenna port, or "upon determining that an auxiliary transit antenna is not coupled to the auxiliary transit antenna port, removing the auxiliary transit antenna from a list of active antennas so that the auxiliary transit antenna will not be used".

To begin, it is noted that this is a substantially similar way of stating the subject matter of claim 1, namely an antenna is included or not included depending on whether or not it is detected. The Examiner argues that Buchholz discloses this subject matter. With respect, Buchholz does not discuss generating lists of antennas, and then adding an antenna upon detecting that it exists or not. Rather, as detailed in passages referred to by the Examiner, see for example column 5, lines 33 to 50, a list of active antennas is constructed, this simply being the list that is in active communication with a particular UM 12. The list of antennas will be different for a different UM, and have nothing to do with whether or not an auxiliary transit antenna has been added or not. Furthermore, a UM is a "user mobile", see the Abstract, and as such Buchholz is again dealing with communication over access links.

In view of the fact that neither Pennock nor Buchholz teach the limitations suggested by the Examiner, it is respectfully submitted that the combination of these two references does not render claim 26 obvious. Claims 27 and 28 depend upon claim 26 and should be allowable for the same reasons. Claim 29 is similar in scope to claim 26 but referring to a controller instead, and as such similar comments apply. Claims 30 and 31 depend upon claim 29.

In view of the above discussion, the Examiner is respectfully requested to withdraw the 35 U.S.C. 103 rejections of the claims.

In view of the foregoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

DAVID STEER, ET AL

By
Allan Brett
Reg. No. 40,476
Tel.: (613) 232-2486 ext. 323

Date: July 19, 2006

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